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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/639,288	08/15/2000	Ross Addinall	1/3-1/2	1572

7590 12/03/2001

Docket Administrator Room 3C-512
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EXAMINER

CAO, PHAT X

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 12/03/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/639,288Applicant(s)
Addinall et al.Examiner
Phat X. CaoArt Unit
2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-10 is/are rejected.
- 7) ☒ Claim(s) 5 and 6 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 3 20) ☐ Other:

Art Unit: 2814

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

2. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In dependent claim 10, line 1, a phrase "a second passivation layer" is unclear because there is no first passivation layer disclosed in independent claim 8.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

Art Unit: 2814

4. Claims 1-4 and 7-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Juso et al (US. 6,265,783).

Juso, in Fig. 4, discloses an integrated circuit die including first terminals 4 having first sets of conductive pads 10 and second terminals 9 having second sets of conductive pads 11 for enabling external connections to be made to the integrated circuit, there being a first predetermined center-to-center spacing between each pad 10 (corresponding to terminal 10) of the first set and the adjacent pad 10 of the first set, and a second predetermined center-to-center spacing, less than the first spacing, between each pad 11 (corresponding to terminal 9) of the second set and the adjacent pads of the first and second sets, and a passivation layer 5 (reference number 5 not shown in Fig. 4, see Fig. 3) exposing pads of the first and second sets; wherein the pads 10 of the first set are larger in area than the pads 11 of the second set (column 6, lines 12-14), wherein the pads of the first and second sets are disposed in line adjacent one edge of the die, and wherein the area of each pad 10 of the first set is suitable for flip-chip assembly of the die and is connected to one set of connection points in the integrated circuit, and the area of each pad 11 of the second set is suitable for wire bond assembly of the die and is connected to another set of connection points in the integrated circuit (see Fig. 5(b) and column 6, lines 40-42).

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2814

6. Claims 1-3 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Shim (US. 5,641,946).

Shim, in Fig. 9A (or Fig. 5A) and Fig. 11, disclose an integrated circuit die 1 including first set of conductive pads d4 and second set of conductive pads (d1,d2,d3) for enabling external connections to be made to the integrated circuit, there being a first predetermined center-to-center spacing between each pad d4 of the first set and the adjacent pad d4 of the first set, and a second predetermined center-to-center spacing, less than the first spacing, between each pad of the second set and the adjacent pads of the first and second sets, and a passivation layer 6 exposing pads d4 of the first sets for connecting to the terminals B4 for flip-chip assembly of the die and exposing pads (d1,d2,d3) of the second sets for connecting to the terminals B1, B2, and B3 for wire bond assembly of the die; wherein the pads d4 of the first set are larger in area than the pads (d1,d2,d3) of the second set.

7. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Pradel (EP. 0 481 889 A1).

Pradel, in Figs. 1 and 2, discloses an integrated circuit die including first and second sets of conductive pads 14 and 16 for enabling external connections to be made to the integrated circuit, there being a first predetermined center-to-center spacing between each pad 14 of the first set and the adjacent pad 14 of the first set, and a second predetermined center-to-center spacing, less than the first spacing, between each pad 16 of the second set and the adjacent pads of the first and second sets, and a passivation layer 20 exposing only pads 14 of the first set.

Art Unit: 2814

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shim (US. 5,641,946).

Shim does not specifically disclose that the first set of pads is connected to one set of connection points and the second set of pads is connected to another set of connection points in the integrated circuit.

However, it would have been obvious to connect the first and second set of pads of Shim to the connection points as set forth above for the known purpose of providing the electrical contacts between the semiconductor die and the mother board.

Allowable Subject Matter

10. Claims 5-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 5-6 are objected because prior art of record fails to disclose all the limitations recited in above claims, including the combination of the pads of the first set being disposed in


Art Unit: 2814

two lines adjacent edges of the die and the pads of the first set being disposed in staggered relationship with respect to the pads of the first set in the other of the two lines.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phat X. Cao whose telephone number is (703) 308-4917. The Examiner can normally be reached on Monday through Thursday. If attempts to reach the Examiner by telephone are unsuccessfully, the Examiner's supervisor, Olik Chaudhuri, can be reached on (703) 306-2794.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956. Group 2800 fax number is (703) 308-7722 or (703) 308-7724.

PC
November 16, 2001


Cao, Phat X.
Patent Examiner
Technology Center 2800